



MEMORANDUM

Date: June 29, 2007

To: The Honorable Chairman and Members
Pima County Board of Supervisors

From: C.H. Huckelberry
County Administrator

A handwritten signature in black ink, appearing to be "CHH", is written over the printed name "C.H. Huckelberry".

Re: Award-Winning Geographic Information System

Pima County's Geographic Information System (GIS) was honored with a Special Achievement in GIS Award, presented by the Environmental Systems Research Institute's president and founder, Jack Dangermond, in a ceremony on June 20, 2007 in San Diego, California. Selected from over 100,000 GIS sites worldwide, this award acknowledges Pima County's success in the development of a full-service geographic-based decision-support system which provides information to a wide range of users in local government and the community. Pima County's GIS library currently contains more than one thousand data layers, many of which are viewed daily over our web-based mapping systems. In the first quarter of 2007, more than 3 million requests were processed over the Internet, putting a friendly face on local government.

Pima County ranks among the top GIS sites in the world. Providing a vital component to decision-making, our approach mirrors the best practices developed in Europe and other parts of the world. In many places it is becoming apparent there is not enough bio-capacity to allow everyone to continue unfettered use of resources and land. Pima County's Sonoran Desert Conservation Plan recognizes this and has set the standard in conservation planning, being used as a model throughout the world.

GIS can be used to apply the science of geography to help solve real problems, communicate better, understand a situation and work effectively towards a solution. It is proving to be a powerful tool to illustrate what is happening at the landscape level. Questions can be posed and GIS can help provide answers. Decisions can then be made proactively and risk managed in location-based decisions.

Two decades of investment in GIS hardware, software and professional staffing to develop and refine this database and its analytical capability is certainly worthwhile and has now been recognized by the international GIS community. Our GIS staff deserves a great deal of credit and gratitude for their diligent pursuit of an invaluable tool that benefits the entire Pima County community and the global world of knowledge.

CHH/jj

c: John Bernal, Deputy County Administrator - Public Works
John Regan, Geographic Information Systems Manager

GIS Project Information

Synopsis of your project goal:

The goal of our project was to facilitate the sharing of GIS data amongst a diverse and wide-spread user community within Pima County, Arizona. Some of the main entities in this community include local, state, and federal government agencies, Indian Nations, municipal planning organizations, utilities, engineering and development companies, E911, real estate agencies, land planning companies, and colleges. As the use of GIS data was increasing exponentially, we saw the need for systems that would serve to centralize data, keep it up to date, and easily disseminate it to the user community. As geospatial technologies advanced, we have been able to enhance existing applications and develop newer and more powerful ones to meet increasingly sophisticated user needs. One of the biggest returns that we have realized from freely sharing data and fostering this within user community is the amount of valuable feedback that we get back from all levels of users, including the general public.

Business problem you solved?

The business problem that we solved was how to disseminate the most current GIS data to the user community. One of the primary benefits of this effort was that all GIS organizations in the region were able to use the same base layers, such as parcel boundaries, the street network, address points, and jurisdictional boundaries. This alone helped lay the foundation for data sharing, collaboration, and cooperative efforts towards enhancing the GIS layers to meet constantly evolving needs and applications. The emergence of web-based mapping systems further advanced our ability to disseminate GIS data to the user community, along with providing a mechanism for developing applications that tie together a wealth of government data and provide it via an interactive map-based interface available world-wide. During the first quarter of 2007, our web-based mapping systems received 3,076,921 requests.

Technology used for implementing and deploying your application or solution:

Our primary focus was on the data and its organization into a central GIS Library. The creation of the GIS Library was facilitated by an intergovernmental agreement (IGA) between Pima County and the City of Tucson. The IGA directed that the City procure an enterprise level server to house the GIS Library data, and that the County move its GIS data to the City's server along with developing the framework for the City to include its GIS data that was under development at the time. Currently there are over 600 user accounts on the enterprise server for County and City staff. An FTP server is currently used to distribute GIS layers to users other than County and City staff. Nightly, over 200 GIS layers are uploaded to the FTP server. Currently there are over 500 non-commercial use FTP accounts established, along with 16 commercial use FTP accounts.

Development team and biographies:

Numerous teams were involved in this effort, and continue to be. The primary groups involved in the launch of this effort and the establishment of the GIS Library framework included transportation department GIS staff from both the County and City. Today, a core group of GIS professionals remain within the Pima County transportation department who act as a coordinating group for maintaining county-wide base layers, managing the GIS Library, and developing new applications for web-base mapping, and data distribution. A multitude of government GIS groups contribute to the GIS Library and participate in regional GIS coordination efforts.

Press Release Information

How does your organization use GIS?

Our organization uses GIS for all aspects of geospatial data management. Some of the primary areas of use within the County include transportation, for the management of the county-wide street network layers, infrastructure inventory and management, pavement management, planning and construction; flood control, for the management of the county-wide floodplain layers, infrastructure inventory and management, enforcement activities, rainfall and flood monitoring; engineering information management, for managing and disseminating government property rights; development services, for managing the county-wide address, zoning, and subdivision layers; wastewater management, for the management of the county-wide sewer network layer. GIS is integral in supporting public counter operations. At a Public Works level GIS is used for regional planning involving growth issues involving neighboring counties. Strategies for controlling West Nile Virus and graffiti abatement are also in development.

How has GIS helped your organization improve service to customers?

A vast majority of customer needs can now be met using GIS on the front-end or the back-end to provide requested information and data. Geospatial related information can be found much faster and efficiently using GIS. A wealth of external attribute data and scanned documents has been brought together and integrated with the GIS data. Web-based mapping services have put the power of GIS into the user's hands, enabling them to explore the volumes of data and information right from their desks.

If applicable, how has GIS helped you provide benefits to the local community?

The local community is considered to be one of our most valued customers. All of the improvements that GIS has made to improve customer service are also realized by the local community through the web-based mapping services that we provide. The magnitude to which we have linked data and their sources together through GIS gets us pretty close to offering a one-stop source for government related data and information. This provides a faster and more efficient mechanism for locating and acquiring needed information, along with providing as much access to this information as possible. It also lessens the need for folks to travel downtown to acquire government information, and even then it reduces the number of departments that one may need to visit to gather all the desired information. We have benefited greatly from the feedback that we receive from the local community.

How long has the GIS been in place?

Planning for GIS in Pima County started within the Pima County Government in 1986, with a pilot parcel conversion project starting in 1988. From that point on, many other base layers were developed. As technologies advanced over the years, we have achieved major milestones in the development of our GIS. Some of these milestones include the ability to move from tiled datasets to seamless ones, creating the central GIS Library, creating a comprehensive metadata system, implementing web-based mapping systems, acquiring and integrating digital orthophotography, introducing the Geodatabase, using LiDAR to capture elevation data, and further integrating scanned documents and external databases.

What are future plans for your organization's use of GIS technology?

We have been in the process of migrating from file-based geospatial data storage and maintenance framework to the Geodatabase, along with implementing logical data models which bring traditionally independent yet related layers together. We have a regional group of GIS professionals formed who are working on a common data model for the street network, which will support many applications within the user community. ArcPublisher and ArcReader are now being used for distribution of electronic maps for review by internal clients, a great improvement over using PDF files. We are also in the process of implementing ArcGIS Server to expand our GIS data dissemination options, and to provide for distributed editing amongst the jurisdictions.